

REMARKS**I. Status of the Claims**

Claims 1-12, 16-19, 23-24 and 26-30 are currently pending for examination, with claims 1, 7 and 23 being in independent form. No amendments to the claims are presented in this paper.

II. Summary of Telephonic Interview with Examiner Soohoo

Applicant wishes to thank Examiner Soohoo for the telephone conference of October 2, 2007 between the Examiner and Applicant's representatives, Lisa Winsor and Nicole Palmer. During that conversation, Applicant's representatives highlighted several distinctions between the pending claims and the citations relied upon in the Office Action. The batch nature of the claimed technology was highlighted, with reference to the figures accompanying Applicant's specification. The Examiner indicated that the present claims are allowable in view of the citations. More specifically, with reference to independent claims 1 and 7, the Examiner acknowledged that the citations do not render obvious the concept of filling a blend chamber with a first material to a first volume (in batch), adding a second material to achieve a desired blend, and dispensing a bulk of a mixture at a desired concentration. With reference to independent claim 23, the Examiner further acknowledged that the citations do not render obvious the concept of draining a portion of an out of specification mixture, correcting a remaining portion of the out of specification mixture, and dispensing a batch of the mixture at a final blend value. The Examiner suggested that a Response be filed reaffirming the previously presented arguments, with no further amendments required to establish patentability of the pending claims.

III. The Drawings are Allowable

The drawings were objected to under 37 C.F.R. § 1.83(a) for failing to show a claimed feature. Applicant respectfully disagrees with this objection. Nonetheless, FIG. 14 has been amended herein to more clearly illustrate a control signal to a first valve to fill a blend chamber to a predetermined volume with a first material, as recited in claim 1. Revised FIG. 14 is presented on Replacement Drawing Sheet 14 (attached to this paper) and generally illustrates a control system in communication with a level sensor 12 and a valve 1. No new matter has been added.

Support for revised FIG. 14 is found throughout Applicant's application as originally filed, for example, at paragraphs [51] to [53] and FIGS. 2 and 5 of corresponding U.S. Patent Application Publication No. 2004/0100860. More specifically, FIG. 2 illustrates a blend routine in which a blend chamber is filled to a predetermined volume with a first material prior to initiating addition of a second material. (Tank Full? -> No -> Fill Tank; Tank Full? -> Yes -> % solids LOOS? -> Yes -> Add Chemical.) FIG. 5 illustrates a subroutine by which the blend chamber may be filled to a predetermined volume. (Tank Full? -> No -> Tank Half Full? -> No -> FV101 DI Water Inlet Valve Actuated; Tank Full? -> Yes -> FV101 DI Water Inlet Valve De-actuated.) Thus, the drawings as originally filed and presently amended fulfill the requirements of 37 C.F.R. § 1.83(a).

Reconsideration and withdrawal of the objection to the drawings is respectfully requested.

IV. Claims 7-10 and 18-19 are Patentable Over Taguchi

Applicant respectfully traverses the rejection of claims 7-10 and 18-19 under § 103(a) as being unpatentable over Taguchi et al. (U.S. 5,476,320) (hereinafter "Taguchi").

Taguchi fails to disclose, teach, or suggest a method of blending at least two materials to a desired concentration comprising providing a first material in bulk to a blend chamber and providing, subsequent to the act of providing the first material in bulk, a flow of a second material to the blend chamber through a second inlet, as presently recited in independent claim 7. As detailed in previous responses, Taguchi simultaneously provides a mixture of undiluted developer solution and pure water to the mixing bath according to a predetermined ratio, and then subsequently provides an adjustable flow of either or both components based on deviations between measured and desired contents. Unlike the present technology in which a first component is added in bulk before flow of a second component is initiated and adjusted to achieve a desired concentration, Taguchi teaches simultaneously delivering both components to an inline mixer before providing the mixture to the mixing bath, and manipulating flow rates of either or both components to the mixture in order to reach a desired content.

Thus, contrary to what is asserted in the Office Action, the fundamental differences in operation between the presently disclosed blend sequence and that of Taguchi do not simply involve "changes in sequence of adding ingredients." In the presently disclosed blend sequence as recited in independent claim 7, first material is not added apart from an initial bulk supply

(except in the failsafe subroutine involving partial drainage of the blend chamber), while the Taguchi blend sequence routinely provides additional first material (without drainage) whenever the measured content exceeds the desired content. As noted in the instant specification, “[a]s compared with other styles of systems, rates as much as twice the current, published process are achieved” by Applicant’s blend routine. (See Applicant’s specification at [0037].)

Taguchi fails to teach providing a first material in bulk to a blend chamber and providing, subsequent to the act of providing a first material in bulk, a flow of a second material to the blend chamber through a second inlet, as presently recited in independent claim 7. Thus, independent claim 7, and each of claims 8-10 and 18-19 which depend therefrom, is patentable over Taguchi.

Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

V. Claims 1-6, 11-12, 16-19, 23-24 and 26-30 are Patentable over Taguchi in Combination with Wilmer

Applicant respectfully traverses the rejection of claims 11-12, 16-19, 23-24 and 26-30 under § 103(a) as being unpatentable over Taguchi in view of Wilmer et al. (U.S. Patent Application No. 2002/0048213) (hereinafter “Wilmer”). Applicant also traverses the rejection of claims 1-6 and 16-17 under § 103(a) as being unpatentable over the same combination and further in view of Owczarz (U.S. 5,409,310) (hereinafter “Owczarz”).

Taguchi has been discussed in detail above. Taguchi fails to disclose, teach or suggest a system comprising a controller configured to generate a control signal to a first valve to fill a blend chamber to a predetermined volume with a first material at a first inlet, a control signal to a second valve, responsive to the blend chamber achieving the predetermined volume, to control the amount of a second material received at a second inlet to achieve a desired concentration of the second material in a mixture, and a control signal, responsive to a detected amount of the second material in the mixture being greater than the desired concentration, to dispense a portion of the mixture out a drain port, as presently recited in independent claim 1. Again, Taguchi teaches simultaneously delivering both components to an inline mixer before providing the mixture to the mixing bath, and manipulating flow rates of either or both components to the mixture without drainage in order to reach a desired content. In contrast to Taguchi, in one aspect of the present invention a control signal responds to the presence of a predetermined volume of the first material in the blend chamber to control the amount of the second material

received at the second inlet of the blend chamber. Also in contrast to Taguchi, in one embodiment of the invention, a control signal responds to a detected amount of the second material in the mixture being greater than the desired concentration to dispense only a portion of the mixture out of a drain port.

Similarly, Taguchi fails to discuss a method comprising providing a first material in bulk to a blend chamber and subsequently providing a flow of a second material to the blend chamber as recited in claims 11-12 and 18-19 which depend from independent claim 7.

With respect to independent claim 23, Taguchi fails to disclose, teach or suggest a system comprising means for draining a portion of an out of specification mixture from a blend chamber upon a determination that a detected concentration of a second component is out of specification, means for correcting a remaining portion of the out of specification mixture in the blend chamber, and means for dispensing a batch of the mixture at a final blend value from the blend chamber. As discussed above, only a prepared developer solution with a desired definite content exits the mixing vessel taught by Taguchi. Taguchi addresses deviations between the measured content and the desired content simply by adjusting flow rates of the undiluted solution and/or the pure water to the mixing bath. In contrast to Taguchi, in one aspect of the invention the system comprises means for draining a portion of the out of specification mixture and means for correcting a remaining portion of the out of specification mixture. Because Taguchi never drains a portion of an out of specification mixture, Taguchi cannot correct a remaining portion of the out of specification mixer in the blend chamber as presently recited.

The lack of any proper motivation to combine the batch system of Taguchi with the continuous mixing system of Wilmer has been extensively addressed in previous responses. Even if the citations could be combined, the above-noted deficiencies in Taguchi are not cured by Wilmer. The continuous mix and dispense system of Wilmer fails to disclose, teach or suggest a system comprising a controller configured to generate a control signal to a first valve to fill a blend chamber to a predetermined volume with a first material at a first inlet, a control signal to a second valve, responsive to the blend chamber achieving the predetermined volume, to control the amount of a second material received at a second inlet to achieve a desired concentration of the second material in a mixture, and a control signal, responsive to a detected amount of the second material in the mixture being greater than the desired concentration, to dispense a portion of the mixture out a drain port, as presently recited in independent claim 1. Because the static mixer in the continuous mix and dispense system of Wilmer has no

appreciable holding volume, all of any out of specification blend in Wilmer is completely diverted to a drain.

Likewise, Wilmer fails to disclose, teach or suggest providing a first material in bulk to a blend chamber and providing, subsequent to the act of providing the first material in bulk, a flow of a second material to the blend chamber through a second inlet, as presently recited in claims 11-12 and 18-19 as they depend from independent claim 7.

With respect to amended independent claim 23, Wilmer also fails to disclose, teach or suggest a system comprising means for draining a portion of an out of specification mixture from a blend chamber upon a determination that a detected concentration of a second component is out of specification, and means for correcting a remaining portion of the out of specification mixture in the blend chamber. As noted above, all out of specification blend in Wilmer is completely diverted to drain. In contrast to both Taguchi and Wilmer, in at least one embodiment, for example, the presently recited system may remove a portion of an out of specification mixture, such as approximately 10-15% of the initial chemical batch over the course of a number of seconds, and correct the remainder in the blend chamber. (See Applicant's specification at [0058].) By draining only a portion of out of specification mixture, one aspect of the present invention reduces material waste and the costs associated with replacing and or disposing of the out of specification mixture. In contrast, mixture in mixer 22 of Wilmer cannot be further adjusted if it is out of specification because it continuously exits the mixer, and must be diverted to drain. Wilmer can adjust the input of materials so that the blend leaving mixer 22 eventually changes, but only after sufficient time has passed for the input to pass to the outlet under continuous operating conditions.

Wilmer discloses a continuous mix and dispense process that cannot cure deficiencies in Taguchi. Thus, each of claims 1-6, 11-12, 16-19, 23-24 and 26-30 is patentable over Taguchi and Wilmer, either alone or in combination.

Owczarz, as applied to claims 1-6 and 16-17, fails to cure the above-noted deficiencies in both Taguchi and Wilmer. Owczarz is generally directed to a semiconductor processor blending system for diluting a concentrated liquid additive into an actively flowing primary liquid. Owczarz fails to disclose a controller configured to generate a control signal to fill a blend chamber with a first material to a first volume (in batch), a control signal to add a second material to achieve a desired blend, and a control signal to dispense a bulk of a mixture at a

desired concentration. Thus, independent claim 1, as well as claims 2-6 and 16-17 which depend therefrom, is patentable over Taguchi in view of both Wilmer and Owczarz.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103 is respectfully requested.

VI. Conclusion

In view of the foregoing amendments and remarks, reconsideration is respectfully requested. This application should now be in condition for allowance; a notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is invited to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,
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